

ACTION SHEET 18

between

The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)

and

The Department of Energy (DOE)

for

Installation of Fuel Assembly Monitoring System at the Fugen Reactor in Japan

1. Introduction

Under Article II (Area of Cooperation) of the Agreement between PNC and DOE for Cooperation in Research and Development Concerning Nuclear Material Control and Accounting Measures for Safeguards and Nonproliferation (hereinafter called the "Agreement"), dated September 15, 1993, DOE and PNC undertake to carry out a cooperative effort to install a fuel flow monitoring system at the Fugen reactor in Japan.

2. Scope of work

This Action Sheet provides for a fuel flow monitoring system, including hardware, software acceptance testing and software-hardware integration at the Fugen reactor. The work performed under this Action Sheet shall be performed at the Los Alamos National Laboratory (LANL) and Fugen reactor facility in accordance with the terms and conditions of the Agreement.

3. Program Management

LANL is the organization responsible for development of the integrated unattended monitoring measurement system. Work to be done is identified in Appendix I and is limited to techniques for nuclear safeguards applications. PNC is responsible for providing design information, operating data, and other information required for completion of the joint studies. Appendix II identifies key personnel working on this project.

DOE and LANL shall work directly with PNC in planning tasks and resolving programmatic and technical questions. LANL shall start by developing and circulating separate work plans with projected milestones for each phase and update the work plans with PNC concurrence as work progresses.

LANL shall prepare brief quarterly progress reports on each task and circulate them to PNC, DOE, and to other pertinent organizations as requested by PNC.

LANL and PNC shall prepare and present written and oral reports at meetings of the Permanent Coordinating Group (PCG).

4. Fiscal Management

PNC shall make cash contributions with the sum of \$300,000 in United States dollars to conduct the activities related to the completion of work for safeguards at the Fugen reactor facility as defined in Appendix I of this Action Sheet in the following manner:

- a. a contribution of \$250,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued upon or shortly after the date of signature of this Action Sheet.
- b. a contribution of \$50,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1996. This payment is subject to approval and the appropriation of necessary funding by the Japanese Government for Japanese Fiscal year 1996.

All contributions by PNC shall be due and payable within thirty days of receipt by PNC of an invoice from DOE, subject to the availability of appropriated funds to PNC.

DOE shall be responsible for the budget planning and financial management and shall make best efforts to complete the PNC-funded activities in Appendix I satisfactorily and within the cash contributions by PNC. DOE costs are determined in accordance with DOE's policy for costing work it performs for others as set forth in 10 CFR Part 1009. The total cost to PNC for DOE's performance of work under this Action Sheet shall not, without PNC's prior consent, exceed the contributions set forth above.

DOE shall not begin or carry out work prior to entry into force of the Agreement and Action Sheet and receipt of the required payment in advance. Work shall not be continued after funds from PNC have been depleted.

Throughout the duration of work under this Action Sheet, PNC shall provide sufficient funds in advance to reimburse DOE for causing LANL to perform the work described in this Action Sheet, and DOE shall have no obligation to perform in the absence of adequate advance funds. Payment in advance from PNC shall be sufficient to cover the expected obligation and cash requirements of the work until a subsequent request for payment in advance can be made, collected, and recorded. In this regard, sufficient advance funds shall be provided to maintain, at a minimum, a continuous 90-days advance of funds for expected DOE fund requirements during the life of this Action Sheet. Advances shall be sufficient to cover expected termination costs that DOE would incur on behalf of PNC.

5. Duration and Termination

This Action Sheet shall enter into force upon the later date of signature and shall continue in force for an 18 month period or until mutually agreed by the parties that all activities under this Action Sheet are completed.

For the Power Reactor and Nuclear Fuel
Development Corporation of Japan

Signature: Masami Katsuragawa

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Name: Masami Katsuragawa

Title: Director
International Division

Date: July 5, 1995

For the United States
Department of Energy

Signature: Kenneth E. Sanders *gms*

Printed

Name: Kenneth E. Sanders

Title: Director
International Safeguards Division

Date: July 31, 1995

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APPENDIX I

1. Study Outline

This program involves a cooperative effort to develop and install a fuel assembly monitoring system at the Fugen reactor. Software for operating and controlling the system is being adapted from software applications at other similar facilities. In addition to installing the system at the Fugen reactor, this Action Sheet provides for integration of the software and hardware and for acceptance testing of the complete system.

Phase I. Design and develop hardware for fuel assembly monitoring system. Adapt software for Fugen application. Perform acceptance test on software.

Phase II. Integrate software and hardware for fuel assembly monitoring system.

Phase III. Install fuel assembly monitoring system at Fugen reactor facility. Provide documentation. Participate in final evaluation.

2. Sites

Phases I and II

Los Alamos National Laboratory
Los Alamos, New Mexico, USA

Phase III

Fugen Reactor Facility
Japan

3. Programmatic Responsibilities

- A. LANL will be responsible for providing its best efforts within the funding and schedule for Tasks I-III. Technical assistance shall be provided on a non-interference basis with existing programs.
- B. PNC will be responsible for facility specific program direction, equipment installation interface.

As more detailed program plans are developed, specific responsibilities will be better defined and delineated.

4. Schedule *

<u>Phases</u>	<u>Calendar Year</u>							
	<u>1995</u>				<u>1996</u>			
	1	2	3	4	1	2	3	4
I.		x	x	x		x		
II.			x	x		x		
III.				x		x	x	x

- * The schedule will be followed on a best-effort basis depending on receipt of funding and availability of parts.

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APPENDIX II

Power Reactor and Nuclear Fuel Development Corporation

1. PNC Headquarters

Tetsuo Ohtani, General Manager
Safeguards Office
Nuclear Material Control Division
Power Reactor and Nuclear Fuel Development Corporation
Sankaidoh Building
9-13, 1-Chome, Akasaka
Minato-Ku, Tokyo, 107, JAPAN

Toshihito Noda, General Manager
International Cooperation Office
International Division
Power Reactor and Nuclear Fuel Development Corporation
Sankaidoh Building
9-13, 1-Chome, Akasaka
Minato-Ku, Tokyo, 107, JAPAN

Development of Energy

1. DOE Headquarters

Kenneth Sanders, Director
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John Puckett
International Safeguards Division (NN-44, GA-017)
Office of Arms Control and Nonproliferation
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2. DOE-Albuquerque Operations Office

James R. Anderson, Director
Science and Technology Transfer Division
DOE/Albuquerque Operations Office
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3. Los Alamos National Laboratory

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